EXHIBIT E

IN THE UNITED STATES DISTRICT COURT FOR THE NORTHERN DISTRICT OF OKLAHOMA

W.A. DREW EDMONDSON, in his capacity as ATTORNEY GENERAL OF THE STATE OF OKLAHOMA and OKLAHOMA SECRETARY OF THE ENVIRONMENT, C. MILES TOLBERT in his capacity as the TRUSTEE FOR NATURAL RESOURCES FOR THE STATE OF OKLAHOMA,

Plaintiff,

vs. 4:05-CV-003290-TCK-SAJ

TYSON FOODS, INC., et al.,

Defendants.

- -

VIDEO DEPOSITION OF WILLIAM H. DESVOUSGES, Ph.D., produced as a witness on behalf of the Plaintiff in the above styled and numbered cause, taken on the 14th day of May, 2009, in the City of Tulsa, County of Tulsa, State of Oklahoma, before me, Karla E. Barrow, a Certified Shorthand Reporter, duly certified under and by virtue of the laws of the State of Oklahoma.

Q I'm sorry. In your report on Page 78.
A Oh, 78. Yes.
Q Okay. And I'm looking at the section heading for Section 4.6.
A Yes. 11:22
Q And the section heading provides, the Stratus survey contains nonresponse bias; did I say that correctly?
A Yes, you did.
Q Is that your conclusion here? 11:22
A Yes, it is.
Q Now, you have all the survey data, do you not?
A Yes, I do.
Q Did you perform any analysis of that data to conclude that nonresponse bias exists? 11:22
A Well, what -- I did not do a specific analysis. What I did do was to look at the response rate, to look at the analysis that was done, and to conclude that when you've got a 50 percent response rate and -- roughly 50 percent, 52 percent, and 11:23
you're missing the other 48, and you have -- to me, what's driving this is the fact that the people who -- we don't know how the people who didn't get the survey are going to respond because most of the things that explain their votes are things that 11:23

happened in the survey. So there's an element of Catch 22 here. And so to some extent, I think that's what puts a greater weight on having a higher response rate in a survey where you're not going to be able to explain that much just based on kind of census data that you know you can always get that external reference to.

Q Do you have any quantitative evidence for concluding that nonresponse bias exists here?

A Well, I have qualitative, but not quantitative evidence because you -- the only way that you could have quantitative evidence would be is if you -- would be if you were able to go out and administer the survey to a large enough sample of the nonrespondents, and then to be able to see whether or not those nonrespondents respond in the same way as the respondents, and that's the only way that you could do it. So it's not possible to have a quantitative estimate without doing that kind of independent work.

Q If we could go back to the NOAA panel guidelines.

A Uh-huh.

Q Which is Exhibit 2. Excuse me. And here I'm referring to the guideline entitled, Careful

don't know?
A I know half of it, but I don't know the second half.
Q Okay. Let's go down to the guideline called advanced approval. And you state in your discussion section on that guideline, Stratus did not seek advance approval of the defendants, did I read that correctly? 01:29
A Yes.
Q Now, advanced approval by the defendants is not a requirement of the NOAA panel guidelines; correct? 01:30
A I'm sorry? I'm looking at it. And on Page 36?
Q Why don't you go ahead and read the guideline part. 01:30
A Okay. It says, since the design of the CV survey can have a substantial effect on the responses, it is desirable that if possible, critical features be pre-approved by both sides in a legal action with arbitration and/or experiments used when disagreements cannot be resolved by the parties themselves. 01:30
Q Now, the guidelines use the phrase if possible; correct? 01:30

A It does say those words, if possible.
Q So are you suggesting that Stratus should have sought advance approval of the defendants regarding the entire survey?
A I think the way that -- the way that I read this is is that the critical features be pre-approved by both sides in the legal action. So to me, that would be the critical design features and questionnaire features in the survey would have been agreed upon. 01:31
Q And would you expect the defendants to have given their approval?
MR. HIXON: Object to form.
A I don't know what the defendants would have done. 01:31
Q (By Ms. Moll) Are you aware of any litigation in which defendants gave their approval to various features of the survey?
A I'm assuming in your question that you don't want to include cooperative assessments where there's a threat of litigation that's out there -- 01:32
Q Correct.
A -- is that correct? This is actual litigation --
Q Correct. 01:32

A -- is that correct? I'm not aware of any.
Q Okay. Let's go down to the guideline that you refer to as scope test.
A Uh-huh.
Q Does having a large sample size introduce bias? 01:32
A No, I wouldn't say that it introduces bias.
Q And does having a large sample size create a statistical artifact?
A I think it can do that. 01:32
Q When you use that phrase statistical artifact in your discussion relating to the scope test guideline, what do you mean by that term?
A Sure. This is -- this is to some extent what the sum of the NOAA panel members talked about when 01:33
they were providing their comments. I think those comments were in regards to proposed NOAA regulations that some members then put forth some additional responses, and they talked about the fact that you can have -- that you can have statistically 01:33
significant differences that aren't meaningful. With a large enough sample size, you can always detect a difference between two versions, and is basically what they're talking about. And so to the extent that you come up with a difference, even 01:33

A Can I move it up out of the way? Would you mind if I just moved both of these just -- do we have a place that we can put them? Thank you very much. Okay. I'm trying to -- okay. We can either start at the beginning of the key projects -- why don't we do that. Maybe it's easier. I usually start at the end for some reason. I don't know why I was doing that. The key project starts on, what is it, Page 2 of the resume, if it had a page number? Could -- are you including ones that you use existing data or ones that involve data collections? 01:45 01:46

Q Both.

A Both, okay. So the first one -- the first one that probably shows up is benefit cost analysis of the 316(b) Regulatory Alternatives in California. It's, I guess, what, four from the bottom. There is also a recreation survey, angler survey that was done for the lower Passaic River. This specifically refers to a creel and angler survey bullet, but there was a companion survey that was done that was a broader recreation survey that there was a paper written from. The Honeywell Use Compensatory Restoration involved some recreation sur -- recreation demand analysis, recreation valuation 01:46 01:47 01:47

A I went to a lot of them in a couple of days so I -- Tenkiller, Fort Gibson, Eufaula, Keystone, I believe. I don't -- I don't believe I went to Broken Bow, and neither -- was it -- I can't pronounce, Oologah or Canton Lake, I don't recall those, and Webber Falls, we may have gone to Webber Falls, I think. And there were a couple of others that we went to, as well, but I'm looking -- I'm looking at the ones that are on this figure here. 02:01

Q Which figure? 02:02

A I'm looking -- I'm sorry, I am looking at Figure 2.1 on Page 15, and those are, I guess, the eight most popular that are right there.

Q When did you visit those lakes?

A Late September of 2008, somewhere in there, late September or early October, somewhere in that ballpark. 02:02

Q And who accompanied you?

A On part of the trip, Tim Jones was there, a lawyer for Tyson, and Leslie Southerland, a lawyer who I believe is with this law firm here. She was with me on the entire trip. 02:03

Q And how long did the trip last?

A Counting the canoe trip, in two -- two very long days. 02:03

Q So your site -- your visits to these sites were over a two day period?
A Yes, they were.
Q How long did you spend at each site?
A It varied. You know, I spent longer at Tenkiller and at -- and we floated the Illinois River, so I spent longer at those than some of the others. I would say on average, at least an hour to an hour and a half, somewhere in that ballpark. 02:03
Q How many lakes are in your model? 02:04
A What, 20 or so. Let me look and see. Let me double-check that. Maybe 28. Let me get the exact number. Well, no, okay. 22. Thank you. There it is.
Q So how many of other lakes that were a part of your model that are not a part of Figure 2.1 did you visit? 02:05
A There's -- there's -- there are a couple, I think, you know. We went to quite a few lakes and, you know, we went to a couple that were near Tulsa, closer to Tulsa than we covered -- and there were a number that we went to kind of working our way around -- around the area, so I don't remember specifically which ones are on which list. 02:05
Q Would that have been a part of that two day -- 02:06

A I was.
Q Did you personally run or replicate the regression?
A I reviewed the -- I don't personally run any models. I hire staff who -- who run the models. I review the results of the models. I have people look at the code that they've used. We go through the models, the results of the models, but I don't run the models. 02:32
Q Now, what was the purpose of your -- the site visits we talked about earlier in September of 2008 when the data wasn't collected until February and March of '09? 02:32
A Sure. The purpose of the site visits was really just to gain some personal familiarity with some of the sites in this area. I'd been to some other Corps sites in other parts of the country at different points in time, but I had not been to any of the Oklahoma sites, and so it was an opportunity to come out and see the different lakes and, you know, be able to -- to at least get feet on the ground, eyes -- eyes looking at facilities and, you know, layout and things like that. 02:32
Q And in September of 2008 when you did the site visits, were you anticipating doing a recreation 02:33

regression?
A No, not really. I wasn't really sure what I was going to do at that particular point in time. I wanted to -- I wanted to be in a position to where I had some familiarity with -- with obviously Tenkiller Lake and the Illinois River. I wasn't sure what I was going to do at that point in time. 02:33
Q Okay. Now, in September of 2008, did you have any reason to believe that water quality affected recreation? 02:34
A That I personally observed on my trip?
Q Did you have any reason to believe at that time that water quality affected recreation at those lakes?
A No, I did not. 02:34
Q Now, you testified before that Holly Michael was the individual who collected the data, and maybe Ms. Chance?
A Yes.
Q Okay. Who ran the Stata model? 02:34
A Holly Michael did.
Q And when did she do so?
A It would have been in March.
Q And did you review the code used to run the model? 02:35

A I had other people review the specific code. I don't review code. I go through and talk about what it is that I want to have in there.
Q So the other people that reviewed the code, who are they? 02:35
A Probably would have been Kristi, she's the most likely person that Holly would have had take a look at the code.
Q Do you know whether, in fact, Kristi did look at the code? 02:35
A I'm not sure specifically based on my own knowledge.
Q Did you personally see the output generated by the computer?
A I saw -- yes, I did, I did see that. 02:35
Q And did you analyze it?
A Yes, I did.
Q Let me hand you what's been marked as Exhibit 5, and I will represent to you that this was produced from your considered materials, and the 02:37 electronic file name is Desvousges, Rausser 002862-lakedata.XLS.
A Okay.
Q And so just so the record is clear, this was an Excel spreadsheet that we received in electronic 02:37

form, and as you can see, I've clipped three parts together --

A Yes.

Q -- it all came from the same spreadsheet. The first page represents the Excel spreadsheet tab that was labeled visitation. 02:37

A Yes.

Q The second grouping, which is Pages 2 through 4, represent the tab labeled data, and the final five pages represent the tab labeled lake levels, 02:38 okay?

A Yes, I see that.

Q Okay. Do you recognize this spreadsheet?

A I certainly recognize the first page, and I don't know that I ever printed out the spreadsheet 02:38 in this particular form and looked at it like this, but this looks to me to be the data that would have been used in the analysis.

Q Okay. Who did the data entry in this document? 02:38

A Holly Michael. Well, let's be -- let me not overspeak. This came from the Corps?

Q Well, this came out of your considered materials.

A Okay, understood, understood, my considered 02:39

materials, but they provided us with this spreadsheet. So there was no data entry. We had an Excel spreadsheet that came from the Corps of Engineers. This is that Excel -- this is just a page from that Excel spreadsheet, so there was no data entry associated with this one at all. 02:39

Q Okay, thank you.

A Sure.

Q And then if you turn to the second group, the one relating to the tab that was labeled data? 02:39

A Uh-huh.

Q Do you recognize that document?

A The one that -- that's -- I think this is the one that I said earlier that this looks to be the variables that would have been in the -- in the model. 02:39

Q I'm sorry, I couldn't hear you.

A Yeah, I don't look -- I don't recognize it in this form, but these are the variables that were included in the model, so I'm assuming these are the data. 02:40

Q So this would have been -- the tab would have been something that your staff generated?

A Yes, that's correct.

Q Okay. And then what about the third grouping 02:40

whatever, but as we say in the report here, we use the 22 Corps of Engineer lakes in Oklahoma that have the data on the lake levels, so we had some of the lakes that are on this first page that we didn't have lake level data for, so we did not include those in the model. I don't know if that answers your question or not. 02:44

Q You'll have to forgive me.

A Sure.

Q If you will turn to the second portion of this exhibit and help me get to how you used 22 lakes, understanding that you used those lakes for which you had lake level information. 02:45

A Okay.

Q According to your earlier response. 02:45

A All right. I have not looked at this spreadsheet in this way. Okay. So this is going to take me -- okay. The -- okay. The lakes -- the lakes are numbered -- oops. The lakes, if we look at the second column, the lakes are, you know, Lake 1, Lake 2, Lake 3, Lake 4, Lake 5, and so you can see that when you get to Lake 5, there's no data on Lake 5 other than visitation data, so Lake 5 was not used. We go over here to Lake 16, whatever that is on the list, that is not used. Lake 18 is not used. 02:45 02:46

Lake 20 is not used. Lake 24 is not used. Lake 26 is not used, so I didn't -- I didn't count the number of ones that were not used. I'm sorry, one, two, three --

Q Dr. Desvousges -- 02:46

A Four, five.

Q If I could ask you one question first.

A Sure.

Q Going back to Lake No. 3.

A Sure. 02:47

Q This spreadsheet reflects lake level information for years 2000 to 2003, but not 2004 through 2007, so would that have been a lake that was included?

A I -- let me see, one, -- I don't know 02:47 specifically. Two, three, four, five. It looks like -- it's possible that that one was included and that there was some -- I'd have to go back and look and see, I'm not sure. But clearly, you know, we know that some of these are not included because 02:48 there's complete blanks in there.

Q As you sit here today, you're not sure about Lake 3?

A I'm not sure about Lake 3, as to whether or not -- whether or not Lake 3 was included. What is 02:48

I would have to go back and double-check to see exactly what was done with those missing observations, because it's possible that -- I just don't know in terms of that. But I do recall specifically that the -- Broken Bow had the highest water clarity levels, and Tenkiller Lake had the second highest in the sample. 02:54

Q But as you sit here today, you don't know for sure whether Broken Bow was included in the model?

A No, I don't remember, I do not. 02:54

Q Okay. Bear with me for a moment.

A Sure.

Q Let's stick with the same exhibit.

A Okay. Exhibit 5?

Q Yes, please. Okay. And the first page of this exhibit, as I mentioned before, was from an Excel spreadsheet where the tab was labeled visitation. 02:56

A Yes.

Q So is my understanding correct that the columns go by year from 2000 to 2007, and then the numbers indicated for each lake represent the number of visits reported by the U.S. Army Corps of Engineers? 02:56

A Yes, visits measured in terms of, I think the 02:57

metric they use is person trips.
Q Okay.
A Yes.
Q All right. So looking at Lake Tenkiller.
A Uh-huh. 02:57
Q I think we talked about earlier that for purposes of the second portion of the exhibit, the lake numbers correspond to how they appear on the first page; correct?
A I -- that's my suspicion. Okay. 02:57
Q Okay.
A But I -- well, I mean, yeah, we could -- we could confirm that.
Q So looking at the first page, Lake Tenkiller would be lake No. 23; correct? 02:58
A That's what I was going to check. Yes.
Q Okay. So then turning to the second part of the exhibit.
A Uh-huh.
Q And turn with me to Lake No. 23. 02:58
A I'm looking at it.
Q Okay. Now, the first column of this portion of the exhibit is labeled visits; do you see that?
A I do see that.
Q Okay. So looking at Lake No. 23 for the year 02:59

2000, the number of visits that's reported on this part of the exhibit is 818,522?
A Yes.
Q Which corresponds with the first page of the exhibit; correct? 02:59
A Yes, it does.
Q So can we correctly assume that Lake Tenkiller is Lake No. 23?
A I think we can.
Q Okay. So if you go back to the first page of this exhibit, can you tell me what the number of visits were for Lake Tenkiller in 2007 as reported by the Corps? 02:59
A Yes, and the number that's in the second spreadsheet is wrong. It dropped a -- it dropped a digit. 02:59
Q So the number of visits?
A Was higher than what's in the second spreadsheet.
Q So as reported by the Corps -- 02:59
A It's 2924047.
Q And as entered in the second part of the exhibit?
A It's 294047, so there is a significant digit missing. 03:00

Q Do you know how an error like that could happen?
A I don't know, particularly since these were copied over from one place to the other.
Q Now, you ran the recreation with the number of visits for Lake Tenkiller in 2002 set to 294,047; isn't that right? 03:00
A That would be my guess if that -- if that mistake was not corrected before the model was run. So it would have underestimated visitation for that last year. 03:00
Q Now, before we just went over this exhibit, were you aware of this error?
A No, I was not, and I -- you know, I'm not sure whether it was caught in terms of when the analysis was done or not, but if it was not, then it's underestimated visitation for that last year on Tenkiller. 03:01
Q Okay. Do you know how this error impacted the significance of the mean clarity variable? 03:01
A No, I don't.
Q And what do you think would happen to the parameter on mean clarity if you reran the regression with the 294,047 replaced by the correct number, which is almost 10 times larger? 03:01

A I don't know. I mean, we'd have to -- there are a lot of sites here in which there are mean clarity readings for that year, there's 20 sites, so I'd have to run it to see what difference it would make. I can't speculate. 03:02

Q But as you sit here today, you don't know --

A I don't know.

Q -- what difference it would make?

A No, I don't.

Q Dr. Desvousges, I'm handing you what's been marked as Exhibit 6. 03:02

A Should I clip 5 back together?

Q Yes, please. And I can represent that Exhibit 6 was produced in your considered materials.

A Okay. 03:04

Q And the electronic file name was DesvousgesRausser002861-OKvisitation.DTA.

A Okay.

Q Do you recognize this document?

A I've not looked at this one before, but I'm looking at it now. Okay. 03:04

Q Do you know what role this document served in your regression model?

A It's the data file that the regression was run on. 03:05

Q And do you know who prepared this file?
A Holly Michael.
Q And do you know how the data was entered into this data file?
A My assumption is that it was brought in from this combination of these spreadsheets here. 03:05
Q Do you know whether any kind of checking would have occurred prior to its use in the regression model to confirm its accuracy?
A The -- it was checked, but the mistake is still in here in terms of Tenkiller Lake for the last year. 03:05
Q And who would have checked it?
A Holly would have checked it, and I don't know whether she asked someone else to double-check it or not. 03:05
Q Now, what role did the lake depth variable play in your model?
A It was one of the independent variables that we included in the model. 03:06
Q Am I correct then that the lake depth data that appears here should correspond with the lake depth data produced by the Army Corps of Engineers?
A I'm not sure what was done with the lake depth data here as to what transformation was done, as to 03:07

what's being used here relative to the -- this appears to be different -- it appears to be different data.

Q Do you know where the lake depth data came from? 03:07

A I'm assuming it still came from the Corps of Engineers, but --

Q Do you know that to be true?

A I don't know that to be true. I'd have to verify that. 03:07

Q Let me hand you Exhibit 7, which is a printout from the U.S. Army Corps of Engineers' Web site relating to Lake Tenkiller.

A Uh-huh.

Q And if you go down in Exhibit No. 6 -- 03:08

A Uh-huh.

Q -- to Lake 23.

A Okay.

Q Which we agreed before was Lake Tenkiller?

A That's correct. 03:08

Q And you look over at the column for lake depth relating to Lake No. 23, that number is 632; correct?

A That's correct, that's what it appears.

Q And then looking at Exhibit 7, if you look in 03:08

the left-hand column, the second set of information there, it says, normal elevation at the top of the conservation pool 632 feet; do you see that?

A I do see that.

Q Do you assume that that's the number that is captured in the lake depth column on Exhibit 6? 03:09

A That's -- that would be my understanding.

Q Then let me hand you what's been marked as Exhibit 8.

A Okay. 03:09

Q Which is the same kind of printout from the U.S. Army Corps of Engineers, but which relates to Fort Supply Lake.

A Okay. Do -- do you know what number Fort Supply Lake is? 03:10

Q Well, looking at Exhibit 5.

A Okay, 1, 2, 3, 4, 5, 6, 7, 8, 9.

Q Correct.

A Do we think it's 9?

Q So if we agree that Fort Supply Lake is Lake No. 9. 03:10

A Uh-huh.

Q And we go over to the lake depth variable on Exhibit 6, the lake depth for Lake No. 9 is indicated as zero; correct? 03:10

A That's correct.
Q And according to Exhibit No. 8, which is the document from the Corps, the lake depth is indicated as 2,004 feet; correct?
A Yes, at the normal conservation for -- for May of '09. 03:10
Q Do you have any understanding as to why Exhibit 6 would reflect a lake depth of zero for Fort Supply Lake?
A No, I don't. 03:11
Q Do you know whether you would get a significant coefficient on water clarity if that were corrected?
A No, I don't.
Q So prior to our going through Exhibit 6, were you aware of the error? 03:11
A Well, at this point, I would want to make sure that this is particularly in error. I -- the other one clearly is in error. This I'm not sure about. I'd have to double-check this one. 03:11
Q But as you sit here right now, you're not sure?
A I'm not sure.
Q Did you include a price variable in your model? 03:12